

Serial No: 09/722,955

Docket No: 1999-0797

REMARKS

All of the previously presented claims 1-43 have been canceled and new claims 44-89 are presented.

Many of claims 44-89 are modeled after claims that were originally presented in the application.

The reason that all of claims 1-43 were canceled and replaced with claims 44-89 is not for reasons of prior art but only convenience. Most of the original claims were in dependent form. Many of them were re-written in independent form when they had been deemed to contain allowable subject matter in the Office action of 08/08/2003. Those claims were then rejected in the most recent Office action of 12/18/2003. It is desired to return them to dependent form and applicant regards the most convenient way to do that is to cancel all of claims 1-43 and re-present new claims.

The language of the new claims is, in some respects, different from the canceled claims. This has been done a) to correct minor errors, b) secure closer antecedent basis among various limitations, c) present language that more particularly conforms to the language of the specification.

Other differences between various ones of the new claims and various ones of the canceled claims point out aspects of the invention that distinguish the invention from the cited Gloeckner reference, as will be apparent from the discussion that follows.

Serial No: 09/722,955

Docket No: 1999-0797

Independent Claims 44, 52, 61, 67, 80, 81, 82 and 83

The independent claims now in the application each contain limitations that patentably distinguish the invention from the cited Gloeckner reference.

An important advantage of applicant's invention is client configurability, wherein any subset of the incoming wavelengths can be added or dropped. As noted, for example, at p. 5, lines 11-19 of the specification, this is achieved in the illustrative embodiments by having light sources in the add port be tunable. Thus once an input channel has been diverted from a particular path through a matrix switch, an add channel from a selected client can be delivered to the output in place of the dropped channel along the same path because the add channel can be tuned to the wavelength associated with the path that has been made available.

Thus in the embodiment of FIG. 7, for example, once the input channel associated with 711A has been diverted by micromirror 722 of 720A, the path that that input channel had been on becomes available. By appropriate add channel tuning and by appropriate activation of one of the micromirrors of 720B, an add channel from any 741A, 741B, 741C and 741D can be put onto the path in question. In the illustration of FIG. 7, it is an add channel from 741C that is diverted onto the available path by micromirror 724.

This aspect of the invention is pointed out in the various independent claims. See, example, the following recitations (emphasis added)

- claim 44 at lines 4-6,

selecting a wavelength;
generating an add signal having at least one add channel at the
selected wavelength;

- claim 52, line 3,

generating add channels at selectable wavelengths,

Serial No: 09/722,955

Docket No: 1999-0797

- claim 61, lines 5-6,
one or more tunable light sources providing one or more additional channels at the one or more optical switches
- claim 67, lines 9-11,
a tunable add port coupled to the optical switch matrix that inputs add channels to the optical switch matrix, each said add channel being tuned to a selected wavelength by said add port
- claim 80, lines 10-12
a tunable add port coupled to the optical switch matrix that inputs add channels to the optical switch matrix, each said add channel being tuned to a selected wavelength by said add port;
- claim 81, lines 11-13
said add port and said optical switch matrix being arranged such that any of said add channels can be directed to said output port at any of said wavelengths;
- claim 82, lines 13-15
said add port and said optical switch matrix being such that any of said add channels can be directed to said output port at any of said wavelengths;
- claim 83, lines 10-13
said add port and said second optical switch array being such that, and said second optical switch array being operable such that, any of said add channels can be directed to said output port at any of said wavelengths via said first optical switch array;
- claim 86, lines 14-18
said add port and said first and second optical switch arrays being such that, and said second optical switch array being operable such that, any of said add channels can be directed to the second surface of any operated one of said micromirrors and thereby be directed to said output port at any of said wavelengths.

Serial No: 09/722,955

Docket No: 1999-0797

Gloeckner neither shows nor renders obvious such tunability and/or selection of the wavelength of the add channel that is going to replace the diverted channel as certain of these claims recite. Moreover, Gloeckner neither shows nor renders obvious the idea that the add signals can be directed to any of the output ports at any of the wavelengths, as others of these claims recite. Gloeckner, rather, is strictly a wavelength-division-multiplexed (WDM) system in which signals have fixed wavelengths and are retained at those wavelengths within the WDM spectrum. Thus a particular add signal already has its wavelength defined.

Dependent Claims 74, 77 and 79;
Claims 84 - 89

Dependent claims 74, 77 and 79 depend either directly or indirectly from independent claim 67 and are allowable for at least the reasons that claim 67 is allowable as discussed above.

These claims further distinguish the invention from Gloeckner. They each include limitations directed to particular embodiments of the invention in which the micromirrors have two reflective surfaces—illustratively a front reflective surface and a back reflective surface. See, for example micromirror 822 in FIG. 9, as well as similar such mirrors in FIG. 3.

Claims 84 - 89 include limitations directed to this feature as well.

Gloeckner neither shows nor suggests such two-reflective-surface micromirrors.

It may also be noted that this feature was recited in original claims 37, 40 and 42 and had those claims been retained in the application, their rejection would have been traversed for the reason, again, that Gloeckner neither shows nor suggests micromirrors having two reflective surfaces.

Serial No: 09/722,955

Docket No: 1999-0797

In view of the foregoing, it is believed that each of the claims in the application is in condition for allowance and reconsideration is requested.

Respectfully submitted,

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